

Soil biology and biogeochemical cycles, 15 credits VT2025, BI1322

Course coordinators:

Eva Krab (EK), Department of Soil and Environment, SLU, eveline.krab@slu.se, phone: 018-672470

Karina Clemmensen (KC), Department of Forest Mycology and Plant Pathology, SLU, karina.clemmensen@slu.se, phone: 018-671874

* Activities marked with a star are mandatory.

Course literature (

S: *Schlesinger and Bernhardt: Biogeochemistry*

P: *Paul: Soil microbiology, ecology, and biochemistry*

B: *Bardgett and Wardle: Aboveground-Belowground linkages*

Time slots in blue italics are suggested activities for these times. Meetings with project group members and supervisors will be planned within these blue time slots and/or after agreement. Please note that this schedule may be subject to changes before and during the course. Remember to check for schedule changes regularly on the course websites SLUNIK and Canvas.

Week #	Date	Time	Room	Type	Subject	Book	Teacher	Teacher
4								
Mon	20-jan		<i>Online Canvas</i>		<i>self study (register, project groups, course prep, learning outcomes etc)</i>			
Tue	21-jan	9.15- 11.00	Sal C212	Lecture	Introduction to the course*		Eva Krab	
		11.00 -12.30	Sal C212	Lecture	Introduction to project work*		Eva Krab	
		<i>12.30-17.00</i>			<i>project work</i>			
Wed	22-jan	9.15-12.00	Sal C212	Lecture	Biogeochemical element cycles	<i>S11,12,13</i>	Jon-Petter Gustafsson	
		<i>12.00-17.00</i>			<i>project work / self study</i>			
Thu	23-jan	9.15-11.00	Sal U	Lecture	Introduction lab practicals*		Karina Clemmensen	
		13.15-17.00	BÖL1	Practical	Practical work sample preparation*		Karina Clemmensen	Eva Krab/ Péter Garamszegi
Fri	24-jan	9.15- 11.00	Sal U	Lecture	Isotopes in biogeochemistry	<i>S11,12,13</i>	Jon-Petter Gustafsson	
		<i>11.00-17.00</i>			<i>project work / self study/ academic writing 1</i>			
5								
Mon	27-jan	9.15-11.00	Sal U	Lecture	Interactions of the C, N, P and S cycles		Marie Spohn	
		<i>11.00-17.00</i>			<i>project work / self study</i>			
Tue	28-jan	9.15-11.00	Sal Y	Lecture	Greenhouse gasses and climate change	<i>S11,12,13</i>	Katharina Meurer	
		<i>11.00-17.00</i>			<i>project work / self study</i>	<i>S11,12</i>		
		17.00			<i>Deadline project working plan*</i>			
Wed	29-jan	9.15-13.00	BÖL 1	Practical	Practical work greenhouse gasses*		Maria Hellman	Andreas Lundgren / Karina Clemmensen
		<i>13.00-17.00</i>			<i>project work / self study</i>			
Thu	30-jan	9.15-11.00	Sal U	Lecture	SOM stabilization	<i>P12,13</i>	Katharina Meurer	
		<i>13.00-17.00</i>			<i>project work / self study</i>			
Fri	31-jan	9.15-13.00	BÖL 1	Practical	Practical work greenhouse gasses*		Maria Hellman	Andreas Lundgren
		<i>13.00-17.00</i>			<i>project work / self study</i>			

6

Mon	03-feb	9.00-10.15 10.15-12.00 13.15-15.00 15.00-17.00 17.00	Sal U Sal U	Lecture Exercise	<i>project work / self study</i> Metabolism Metabolism exercise <i>project work / self study</i> <u>Deadline peer review project working plan*</u>	P9	Chris Jones Chris Jones	
Tue	04-feb	9.00-13.00 13.00-17.00	Datorsal 1 & 3	Practical	Data analyses greenhouse gasses* <i>project work / self study</i>		Maria Hellman Andreas Lundgren	
Wed	05-feb	9.15-12.00 12.00-17.00 17.00	Sal U	Lecture	The Fungi <i>project work / self study</i> <u>Deadline revised working plan*</u>	P4	Björn Lindahl	
Thu	06-feb	9.15-11.00 11.00-17.00	Sal U	Lecture	Fungal ecology <i>project work / self study</i>	P4	Björn Lindahl	
Fri	07-feb	9.15-12.00 11.00-17.00 17.00	Sal U	Lecture	The Bacteria and Archea <i>project work / self study</i> <u>Deadline lab report 1*</u>		Sara Hallin	

7

Mon	10-feb	9.15-12.00 13.15-17.30	Sal U BÖL 1	Lecture Practical	Molecular community analyses Practical work molecular methods*	P6,7	Juanjo Rodriguez Maria Hellman Eva Kubove
Tue	11-feb	9.15-17.00	BÖL 1	Practical	Practical work molecular methods*		Maria Hellman Eva Kubove
Wed	12-feb	9.15-12.30 12.30-17.00	Datorsal 1 & 3	Practical	Data analyses molecular methods* <i>project work / self study</i>		Maria Hellman Eva Kubove
Thu	13-feb	9.00-13.00 13.00-17.00			<i>project work / self study</i> <i>Questions project report</i>		<i>project supervisors</i>
Fri	14-feb	9.15-12.00 13.15-15.00 15.00-17.00	Sal U Sal U	Lecture Exercise	Ecological concepts Ecological concepts assignment <i>project work / self study/ academic writing 2</i>	P10	Karina Clemmensen Karina Clemmensen

8

sportlov

Mon	17-feb	9.15-12.00 12.00-17.00 17.00	Sal U	Lecture	Soil architecture and structure formation <i>project work / self study</i> <u>Deadline lab report 2*</u>	P2	Elsa Arrazola
Tue	18-feb	9.15-17.00			<i>project work / self study</i>		
Wed	19-feb	9.15-12.00 12.00-17.00 17.00	Sal U	Seminar	Group assignment discussing human impacts* <i>project work / self study</i> <u>Deadline obs. and exp. approaches assignment*</u>	P18	Katharina Meurer
Thu	20-feb	9.00-17.00			<i>project work / self study</i>		
Fri	21-feb	9.15-12.00 12.00-17.00	Sal Y	Exercise	Observational and experimental approaches in soil biology and biogeochemistry <i>project work / self study/ academic writing 3</i>	S12,13	Marie Spohn

9

Mon	24-feb	9.00-13.15 13.15-17.00	Sal U	Lecture	The soil fauna project work / self study	P5	Maria Viketoft		
Tue	25-feb	9.15-11.00 13.00-17.00	Sal U BÖL 1	Lecture	Trophic interactions Soil fauna practical	P10,B2	Nadia Maaroufi Péter Garamzegi	Eva Krab	
Wed	26-feb	9.15-12.00 12.00-16.00	Sal Y	Lecture	Decomposition project work / self study	P12,13	Björn Lindahl		
Thu	27-feb	9.15 - 10.00 10.15 - 17.00	Sal U Sal U	Seminar	Mid-course reflection Oral presentations project work*		Eva Krab Eva Krab	Karina Clemmensen <i>project supervisors</i>	
Fri	28-feb	9.00-10.00 10.15-12.00 12.00-17.00	Sal U	Lecture	project work / self study Mycorrhiza project work / self study	P11	Björn Lindahl		

10

Mon	03-mar	9.15-12.00 13.15-17.00	Sal U Sal Y	Lecture Exercise	Nitrogen Transformations N-cycling exercise	P14,15	Sara Hallin Chris Jones		
Tue	04-mar	9.15-17.00	BÖL 1	Practicals	Practicals C and N cycling*		Tamlyn Gangiah	Erica Packard	
Wed	05-mar	9.15-12.00 12.00-17.00	BÖL 1	Practicals	Practicals C and N cycling* project work / self study		Tamlyn Gangiah	Erica Packard	
Thu	06-mar	9.15-11.00 11.00-17.00	Sal U	Lecture	Rhizosphere biology project work / self study	P11	Tarquin Netherway		
Fri	07-mar	9.15 - 12.00 13.15-17.00	Sal U Datorsal 1 & 3	Lecture Practicals	Mineralization Data analysis C and N cycling*		Björn Lindahl Tamlyn Gangiah	Erica Packard	

11

Mon	10-mar	9.00-17.00 17.00			project work / self study <u>Deadline uploading data compilation*</u>				
Tue	11-mar	9.00-17.00 17.00			project work / self study <u>Deadline project report*</u>				
Wed	12-mar	9.00-17.00 17.00			project work / self study <u>Deadline peer review project report*</u>				
Thu	13-mar	8.30 -13.00 13.00-14.00 14.00-15.00 15.00-17.00	Datorsal Huguin and Munin Sal U	Practicals Evaluation	Data compiling day, analysis and discussion* Course lunch Course evaluation project work / self study		Karina Clemmensen Karina Clemmensen	Eva Krab Eva Krab	
Fri	14-mar	9.00-13.00 13.00-17.00			Excursion Norunda project work / self study		Björn Lindahl	Eva Krab	

12

Mon	17-mar	9.15-12.00 13.15-17.00	Sal U BÖL 1	Lecture Practical	C/N and modeling in agriculture Microscopy mycorrhiza	Thomas Kätterer Tarquin Netherway Erica Packard
Tue	18-mar	9.00-17.00 17.00			<i>project work/self study</i> <u>Deadline lab report 3*</u>	
Wed	19-mar	9.00-17.00 17.00			<i>project work/self study</i> <u>Deadline revised project report*</u>	
Thu	20-mar	9.00-17.00			<i>self study</i>	
Fri	21-mar	9.00-13.00 13.15-15.00 15.00-17.00	Zoom	Questions	Questions exam <i>self study</i>	all teachers (0)

13

Mon	24-mar	9.00-17.00 13.00-18.00	Tentamensal 2		<i>self study</i> Exam	
-----	--------	---------------------------	---------------	--	---------------------------	--

Planned examinations

The following written examinations are planned for the course:

1. Regular written examination during the course: *Monday the 24th of March 2025, 13.00-18.00, Location: to be determined*
2. First re-examination in connection with the course: *Wednesday the 30st of April 2025, 13.00-18.00, Location: to be determined*
3. Additional re-examination: *August, day, time and location to be determined*

If you plan to attend a written examination, you must register at the latest 10 weekdays (usually two weeks) beforehand. Registration is made via Ladok. For a regular examination, registration can be done from the start of the course; for re-examination, it opens about four weeks before the examination. Re-examination dates are preliminary. Information on exact time and location for re-examinations will become available when the time approaches.

For access to extended time, separate location or computer for examination, you must inform our course secretary at mark-kurssektariat@slu.se; this requires a special decision from the disabled-student office (see <https://www.slu.se/en/education/contact-and-support/disabilities/>).

Teachers	Teaching labs	Literature project supervisors
Elsa Arrazola Vasquez	Karina Clemmensen	Layla Márques San Emeterio
Karina Clemmensen	Tamlyn Gangiah	Hanna Burger
Jon-Petter Gustafsson	Maria Hellman	Yval Zelnik
Sara Hallin	Eveline Krab	Peter Garamszegi
Chris Jones	Andreas Lundgren	Chloe Maclaren
Thomas Kätterer	Tarquin Netherway	Oksana Valetska
Björn Lindahl	Erica Packard	Hedvig Nenzen
Katharina Meurer	Péter Garamszegi	
Marie Spohn	Eva Kubove	
Nadia Maaroufi		
Juanjo Rodriguez		
Tarquin Netherway		
Maria Viketoft		